

REMARKS

Claims 1-19 have been examined. Applicants are adding new claims 20-33. Claims 1-33 are now all the claims pending in the application. No new matter has been introduced and support for the new claims can be found in the specification. MPEP §706.03(o)(8th Edition).

Rejection of Claims 1, 2 and 15 under 35 U.S.C. § 102(e)

The Examiner has rejected claims 1, 2 and 15 under 35 U.S.C. § 102(e) as allegedly being anticipated by Cook. Applicants respectfully traverse this rejection.

Figure 3, at step 70 of Cook, describes that the printer controller 36 determines whether or not intensity values are substantial based on a comparison with a threshold value. (Col. 8, lines 31-56). If the differences are deemed substantial, the printing operation is stopped without user input. Cook teaches to automatically stop printing.

In contradistinction, claim 1 requires that if compatibility of an ink cartridge cannot be confirmed, the ink jet recording apparatus always awaits an input from the user before executing a subsequent print operation. Figure 3 of Applicants' drawings depicts this aspect of a non-limiting embodiment.

For at least these reasons, Cook fails to teach or suggest the ink jet recording apparatus of claims 1 and 2.

Method claim 15 recites always awaiting input of an instruction by a user before executing a subsequent printing operation. Cook does not teach always waiting for an instruction by a user.

For at least these reasons, Cook fails to teach or suggest the method of claim 15.

Accordingly, Applicants respectfully request that the rejection of claims 1, 2 and 15 under 35 U.S.C. § 102(e) be withdrawn.

Rejection of Claim 3 under 35 U.S.C. § 103(a)

The Examiner has rejected claim 3 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Cook, in view of U.S. Patent No. 6,217,144 B1 (hereinafter Myung). Applicants respectfully traverse this rejection.

Myung fails to cure the deficiencies of Cook with respect to claim 1. Myung fails to teach or suggest always awaiting input of an instruction by a user before executing a print operation.

Cook and Myung, individually or in combination, fail to teach or suggest this aspect of the ink jet recording apparatus of claim 1.

For at least these reasons, Applicants respectfully request that the rejection of claim 3 under 35 U.S.C. § 103(a) be withdrawn.

Rejection of Claims 4-6, 16 and 17 under 35 U.S.C. § 103(a)

The Examiner has rejected claims 4-6, 16 and 17 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Cook, in view of U.S. Patent No. 5,455,606 (hereinafter Keeling), in view of U.S. Patent No. 5,699,091 (hereinafter Bullock). Applicants respectfully traverse this rejection.

With respect to claim 4, the Examiner alleges that Keeling teaches if information is not available regarding a recording unit, default values are used which approximate the expected values, citing column 11, lines 60-66 of Keeling.

Additionally, the Examiner alleges that “Cook discloses storing an optimum drive condition for an ink cartridge and ink information for the ink cartridge (column 7, lines 5-16). Obviously, in the invention of Cook, if the data regarding an optimum drive condition and ink information cannot be obtained, the cartridge will be judged incompatible. Keeling discloses that if optimum drive conditions cannot be obtained, default values are selected. Thus the prior art as a whole suggest selecting default values for an incompatible cartridge.” (Page 9, paragraph 9 of the Office action, Response to Arguments). Applicants respectfully disagree and submit that the Examiner has overlooked the specific teachings of each reference.

When applying 35 U.S.C. § 103 the references must be considered as a whole and must suggest the desirability and thus the obviousness of making the combination. Applicants respectfully disagree that Cook, Bullock and Keeling, individually or in any combination, teach or suggest the above-mentioned aspect of claim 4. The Examiner’s rejection is not supported by the applied prior art.

As to the first proposition, the Examiner alleges, in the invention of Cook, that if data regarding an optimum drive condition and ink information can not be obtained, the cartridge will be judged as incompatible. Cook fails to account for this situation.

The printer controller 36 of Cook compares values by accessing the printhead cartridge memory device or the remote ink cartridge memory device. (Col. 8). However, Cook fails to

disclose the condition when data for optimum drive conditions cannot be obtained from these memories.

Contrary to the Examiner's interpretation of Cook, Applicants submit that Cook suggests that if data cannot be obtained, printing would be stopped. Indeed, col. 7, lines 20-50 of Cook describes that if the remote ink cartridge 8 is not properly installed, the interface cable 22 will not make electrical connection with the set of contacts 20 on the remote ink cartridge 8. If there is no electrical connection, the printer controller 36 will read all zeros (or all ones) to indicate an improper installation and generate a message notifying the printer user of the problem. *Id.* Therefore, if col. 7, lines 20-50 of Cook equates to the printer not being able to access data, Cook teaches to stop printing and wait for proper installation.

Finally, it is clear in step 62 of Figure 3 of Cook that the data regarding optimum drive conditions can be obtained or read. Therefore, subsequent steps 65-75 of Figure 3 are performed when the data regarding optimum drive conditions can be obtained.

On the other hand, Keeling describes that if the calibration code for the reconnected print head is not entered through the keyboard 29, the logic system can determine from the pin connections on the conduit 5 which type of print head is connected and default values for the calibration code for each print head type are stored in the logic system 93. (Col. 28, line 60 through col. 29, line 3; see also Figure 1).

However, Keeler discloses "that the calibration code could be provided to the logic system by other means rather than through the keyboard 29. For instance, the code could be recorded electronically in the print head of the conduit 5, so that the logic system can read the code out **whenever** a new print head is connected." (Col. 29, lines 10-17) (Emphasis added).

Keeler suggests that data will always be able to be obtained if it is stored in this manner, whereby default values would not be necessary. Accordingly, those skilled in the art would not have considered the default values of Keeler for combination with Cook or Bullock. Applicants respectfully disagree that one skilled in the art would have considered the default values of Keeler as **relating in any motivating manner** to incompatibility of an ink cartridge. Keeler specifically teaches that the default values directly correspond to the user failing to input the calibration codes using the keyboard 29. Clearly, Keeling acknowledges that such a problem does not exist, if the calibration codes are stored electronically, thereby obviating the need of obtaining defaults for the calibration code.

Applicants submit that Bullock fails to relate to this aspect of Applicants' invention and the Examiner does not rely on Bullock for the rejection of claim 4.

Cook, Keeling, and Bullock, individually or in any combination, fail to teach or suggest that if a cartridge is incompatible, to execute a print operation based on the data in the default data storage means. The applied art taken as a whole fails to suggest any connection or nexus between an incompatible ink cartridge and executing a print operation based on data in a default data storage means.

Notwithstanding, Cook, Keeling, and Bullock, individually or in combination, fail to teach or suggest a default data storage means that stores default data, as required in claim 4. Cook and Bullock are silent as to this aspect. Keeling describes that the logic system determines defaults for the calibration code from the pin connections on the conduit 5 and these defaults are stored in the logic system 93. However, Keeling fails to suggest that the defaults are stored in a separate memory in the logic system 93, that is, a default storage means. Therefore, even

assuming *arguendo*, that Keeling teaches storing defaults in a memory of the logic system 93, Keeling is silent as to the logic system 93 maintaining two separate memories, a storage means and a default storage means that store data or default data, as required in claim 4.

Additionally, as mentioned above, Keeling describes storing the calibration codes electronically, in order to avoid the need of the logic system 93 having to determine defaults when the calibration codes have not been entered using the keyboard 29.

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. MPEP §2143.03 (8th Edition); *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (CCPA 1974). For at least the reasons presented above, the Examiner has failed to establish that Cook, Keeling and Bullock, individually or in combination, teach or suggest the above-mentioned aspect of claim 4.

Additionally, Applicants respectfully disagree with the Examiner's reasons to combine these references. The Examiner's stated reasons to modify or combine these references equate to a benefit that arises from the claimed invention, not a motivation to provide the specific invention claimed. In other words, without hindsight knowledge of the invention itself, there is no reason of record why one of ordinary skill in the art would have modified the references in a manner to provide the proposed benefit or to have identified and selected each component for combination in the manner claimed.

The Examiner has attempted to reconstruct Applicant's invention using *impermissible* hindsight. Indeed, for at least the reasons discussed above, the Examiner's rationale for picking certain aspects of each reference and combining them is simply untenable and cannot be objectively traced from the prior art as a whole.

For at least these reasons, Applicants respectfully request that the rejection of claim 4 under 35 U.S.C. § 103(a) be withdrawn.

Claim 5 is patentable at least by virtue of its dependency on claim 4, as well as reciting its own patentably distinct features.

Method claim 16 includes executing print operation based on data stored in default data storage means if the ink cartridge is incompatible. For at least the reasons analogous to those presented above with respect to claim 4, Cook, Keeler and Bullock, individually or in combination, fail to render obvious claim 16.

With respect to claim 6, the grounds of rejection fail to address this claim. MPEP §2142 (Legal Concept of Prima Facie Obviousness)(8th Edition) states that the Examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the Examiner does not produce a *prima facie* case, the Applicant is under no obligation to submit evidence of nonobviousness. *Id.*

For at least these reasons, the Examiner has failed to establish a *prima facie* case of obviousness for claim 6.

Additionally, Applicants note the following. The ink jet recording apparatus of claim 6 includes setup range storage means storing normal setup range data and a determination section that, *inter alia*, compares ink information read from the storage element with the normal setup range data and executes printing using the general purpose drive condition if the ink information is out of the normal setup range. Cook, Keeling and Bullock, individually or in combination, fail to teach or suggest the above-mentioned limitations. Therefore, Cook, Keeling and Bullock fail to render obvious the ink jet recording apparatus of claim 6.

With respect to method claim 17, the Examiner failed to address “executing print operation using general-purpose drive condition if the ink information contains information out of the normal setup range.” For at least these reasons, the Examiner has failed to establish a *prima facie* case of obviousness.

Notwithstanding, Cook, Keeling and Bullock individually or in combination, fail to teach or suggest this aspect of method claim 17.

Accordingly, Applicants respectfully request that the rejection of claims 4-6, 16 and 17 be withdrawn.

Rejection of Claims 9-11, 18 and 19 under 35 U.S.C. § 103(a)

The Examiner has rejected claims 9-11, 18 and 19 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Cook, in view of U.S. Patent No. 6,102,508 (hereinafter Cowger).

Applicants respectfully traverse this rejection.

With respect to claims 9-10, the Examiner has acknowledged that Cook does not disclose outputting data used as a guide for determining a compatible ink cartridge, however alleges that Cowger discloses outputting data used as a guide with a printing apparatus. (Page 7, lines 1-4 of the Office action).

Claims 9 and 10 require that the data used as a guide is displayed on the operation panel of the ink jet recording apparatus, or the data is outputted to a display of a host computer. Cowger fails to teach or suggest this aspect of Applicants’ embodiments of the present invention. Rather, Cowger describes printing “an image 14 on the print media 12 of the replaceable consumable.” (Col. 2, lines 50-52; see also col. 3, lines 34-35).

The Examiner alleges that the modification to Cook would have been obvious based on Cowger, citing to col. 1, lines 22-30, col. 2, lines 52-55 and col. 3, lines 34-35. However, as discussed above, Cowger simply teaches to print the image 14 of the replaceable consumable 22 on print media 12. Applicants respectfully disagree that the modifications alleged by the Examiner can be objectively traced from the teachings of Cowger.

Additionally, Applicants respectfully disagree that one skilled in the art would have been motivated to make the Examiner's modifications in order to "facilitate operator selection of the proper replaceable ink cartridge in the printer," as alleged by the Examiner. Indeed, Cowger describes that the printing of the image 14 on print media 12 could be used "as a shopping list to stock up on the replaceable consumable 22." (Col. 4, lines 1-3). Thus, one skilled in the art would not have been motivated to further modify Cook and Cowger, in the manner claimed by Applicants.

Cook and Cowger, individually or in combination, fail to teach or suggest these aspects of the ink jet recording apparatus of claims 9 and 10. Additionally, the Examiner has failed to establish a *prima facie* case of obviousness under 35 U.S.C. § 103 because one skilled in the art would not have been motivated, at the time of the invention, to combine or modify Cook and Cowger, in the manner suggested by the Examiner.

The ink jet recording apparatus of claim 11 includes that the data used as a guide is displayed on the operation panel of the ink jet recording apparatus, or the data is outputted to a display of a host computer. For reasons analogous to those presented above with respect to claims 9 and 10, Cook and Cowger, individually or in combination, fail to render obvious the ink jet recording apparatus of claim 11.

Method claim 18 includes outputting the data used as a guide either on the operation panel of the recording apparatus or a display of a host computer. For reasons analogous to those presented above with respect to claims 9 and 10, Cook and Cowger, individually or in combination, fail to render obvious the method of claim 18.

Method claim 19 includes outputting data used as a guide on a display of a host computer or a display of a recording apparatus. For reasons analogous to those presented above with respect to claims 9 and 10, Cook and Cowger, individually or in combination, fail to render obvious the method of claim 19.

Rejection of Claims 12 and 13 under 35 U.S.C. § 103(a)

The Examiner has rejected claims 12 and 13 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Cook, in view of Cowger, and further in view of U.S. Patent No. 5,764,251 (hereinafter Hashimoto). Applicants respectfully traverse this rejection.

Hashimoto fails to compensate for the deficiencies of Cook and Cowger with respect to claim 11. Hashimoto fails to teach or suggest that the data used as a guide is displayed on a display of a host computer.

Claims 12 and 13 are patentable at least by virtue of their dependency on claim 11, as well as reciting their own patentably distinct features. Accordingly, Applicants respectfully request that the rejection of claims 12 and 13 under 35 U.S.C. § 103(a) be withdrawn.

Amendment Under 37 C.F.R. § 1.111
U.S. Application No. 09/688,187

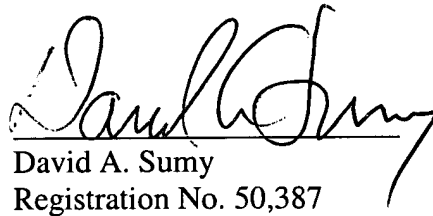
Attorney Docket No. Q61335
Art Unit 2853

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned attorney at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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PATENT TRADEMARK OFFICE

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APPENDIX
VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

The claims are amended as follows:

1. (Amended) An ink jet recording apparatus comprising an ink jet recording head for receiving supply of ink from an ink cartridge provided with storage means storing data for determining compatibility of a recording apparatus, and control means for determining compatibility of ink based on the data in the storage means and executing print operation, wherein

if compatibility to an ink cartridge cannot be confirmed when the ink cartridge is mounted, the recording apparatus generates a caution and always awaits input of a ~~continuation~~ an instruction by a user before to execute the recording apparatus executes a subsequent print operation ~~with the ink cartridge~~.

9. (Amended) An ink jet recording apparatus comprising an ink jet recording head for receiving supply of ink from an ink cartridge provided with storage means storing data for determining compatibility to a recording apparatus, and control means for determining compatibility of ink based on the data in the storage means and executing print operation, wherein

when the recording head is to be filled with ink after an ink cartridge is mounted, the control means determines compatibility of the ink cartridge based on the data from the storage

means, and outputs data used as a guide for determining a compatible ink cartridge if it is determined that the ink cartridge is incompatible~~compatibility cannot be confirmed,~~

wherein the data used as a guide is at least one of (1) displayed on an operation panel of the ink jet recording apparatus and (2) outputted to a display of a host computer.

11. (Amended) An ink jet recording apparatus comprising an ink jet recording head for receiving supply of ink from an ink cartridge provided with storage means storing data for determining compatibility to a recording apparatus, and control means for determining compatibility of ink based on the data in the storage means and executing print operation, wherein

~~if compatibility of the ink cartridge cannot be confirmed~~ is determined as being incompatible, the control means outputs data used as a guide for determining a compatible ink cartridge,

wherein the data used as a guide is at least one of (1) displayed on an operational panel of the ink jet recording apparatus and (2) outputted to a display of a host computer.

15. (Amended) A method of determining compatibility of ink based on data stored in storage means of an ink cartridge for supplying ink to a recording head of an ink jet recording apparatus, the method comprising:

generating a caution if compatibility to an ink cartridge cannot be confirmed when the ink cartridge is mounted; and

always awaiting input of a ~~continuation~~ instruction by a user before to
~~execute~~ executing a subsequent printing operation.

18. (Amended) A method of controlling an ink jet recording apparatus comprising an ink jet recording head for receiving supply of ink from an ink cartridge provided with storage means storing data for determining compatibility to a recording apparatus, the method comprising the steps of:

determining compatibility of the ink cartridge based on the data from the storage means when the recording head is to be filled with ink after the ink cartridge is mounted; and

outputting data used as a guide for determining a compatible ink cartridge if the ~~compatibility cannot be confirmed~~ ink cartridge is incompatible;

wherein the data used as a guide is at least one of (1) displayed on an operation panel of the ink jet recording apparatus and (2) outputted to a display of a host computer.

19. (Amended) A method of assisting a user to determine a compatible cartridge, the method comprising the steps of:

checking data of a first ink cartridge to determine compatibility of the first ink cartridge;

outputting data used as a guide for determining a compatible, second ink cartridge if compatibility of the first ink cartridge cannot be ~~confirmed~~ determined;

wherein the data used as a guide is at least one of (1) displayed on a display of a host computer and (2) displayed on a display of a recording apparatus.

Amendment Under 37 C.F.R. § 1.111
U.S. Application No. 09/688,187

Attorney Docket No. Q61335
Art Unit 2853

Claims 20-33 are added as new claims.